CLAIMS

1. A formulation for the nasal absorption of insulin, which comprises a component composed of insulin and porous, spherical calcium carbonate as its carrier.

2. The formulation according to Claim 1, in which the porous, spherical calcium carbonate, comprises trabeculate or needle-shaped crystals, or an aggregation of the parallel intergrowth of these forms.

3. The formulation according to Claim 1 or 2, in which the porous, spherical calcium carbonate has a particle diameter in the substantial range of 18-115 μm.

4. The formulation according to Claim 1 or 2, in which the porous, spherical calcium carbonate has a particle diameter in the substantial range of 20-32 μm.

5. The formulation according to Claim 1 or 2, in which the porous, spherical calcium carbonate has a particle diameter in the substantial range of 20-32 μm, and a median particle diameter of 22 μm or greater and less than 30 μm.

6. The formulation according to Claim 1 or 2, in which the porous, spherical calcium carbonate has a particle diameter in the range of 20-32 μm.

7. The formulation according to any of Claims 1-6, in which the insulin content of the component composed of insulin and porous, spherical calcium carbonate is 0.1-50% by weight based on the total weight of the component.

8. The formulation according to any of Claims 1-7, in which

the porous, spherical calcium carbonate has a relative surface area of 1.5 m^2/g or greater.

9. The formulation for the nasal absorption of insulin comprising a component composed of insulin and calcium carbonate as its carrier, in which the calcium carbonate is substantially composed of cubic or trigonal system crystals and has a particle diameter in the range of 20-32 μm.

10. The formulation according to any of Claims 1-9, in which the insulin content of the component composed of insulin and calcium carbonate is 0.1-50% by weight based on the total weight of the component.

11. A method for the treatment of diabetes that comprises administering a component composed of insulin and porous, spherical calcium carbonate as its carrier into the nasal cavities of diabetics who need an effective amount of insulin.

12. The method according to Claim 11, in which the calcium carbonate is substantially composed of cubic or trigonal system crystals with a particle diameter in the range of 20-32 μm, and the insulin content of a combined component of insulin and calcium carbonate is 0.1-50% by weight based on the total weight of the component.

13. The use of a component composed of insulin and porous, spherical calcium carbonate as a carrier for preparing a formulation for the nasal absorption of insulin.

14. The use according to Claim 13, in which the calcium carbonate is substantially composed of cubic or trigonal system crystals with a particle diameter in the range of 20-32 μm, and the

insulin content of a combined component of insulin and calcium carbonate is 0.1-50% by weight based on the total weight of the component.